

**Buddy 15/18**  
**Aero 20-01/INOX**  
**Aero 20-11/-21/-21INOX**  
**Aero 25-11/-21**



**Service Manual**

**Nilfisk**  
**ALTO**

*Why Compromise*

**Wap**  
**KEW**

TECHNOLOGIES

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## Preface

This repair manual contains a detailed description of the main repair work for wet and dry cleaners of the Nilfisk-ALTO Buddy and Aero Series.

Repair work requires a suitable testing workplace with the necessary power supply.

If operating errors are evident, refer the customer to the operating instructions.

A fault in the equipment can have a number of causes. Chapter "C" Troubleshooting will help you here.

Refer to the illustrated spare parts lists during repairs. They show the assembly position and the sequence in which the individual components should be assembled.

Always observe "Technical Information" sheets! They contain information on technical modifications made after publication of this repair manual.

Technical Information sheets are also valid as a supplement to the spare part list until publication of a new edition!

Repair manuals and technical information sheets should be available at the site where repairs are carried out.

It is not permitted to give them to third parties.

**Use original Nilfisk-ALTO spare parts only!**

## Safety Instructions

**For your own safety!**



**Repairs should only be made by someone who has received proper instructions for the job or who is a qualified electrician.**

**After the repair or modification an electrical examination is to be performed according to DIN VDE 0701 / 0702.**

Before using the cleaner, always read the operating instructions and keep them readily available.

Only allow the vacuum cleaner to be used by persons who have been trained in its use and who have been explicitly authorized to use it.

Observe national safety directives and regulations for the electrical engineering trade, in particular:

IEC 60335-2-69  
EN 60335-2-69

DIN VDE 105 Part 1:  
Operation of power Installation.

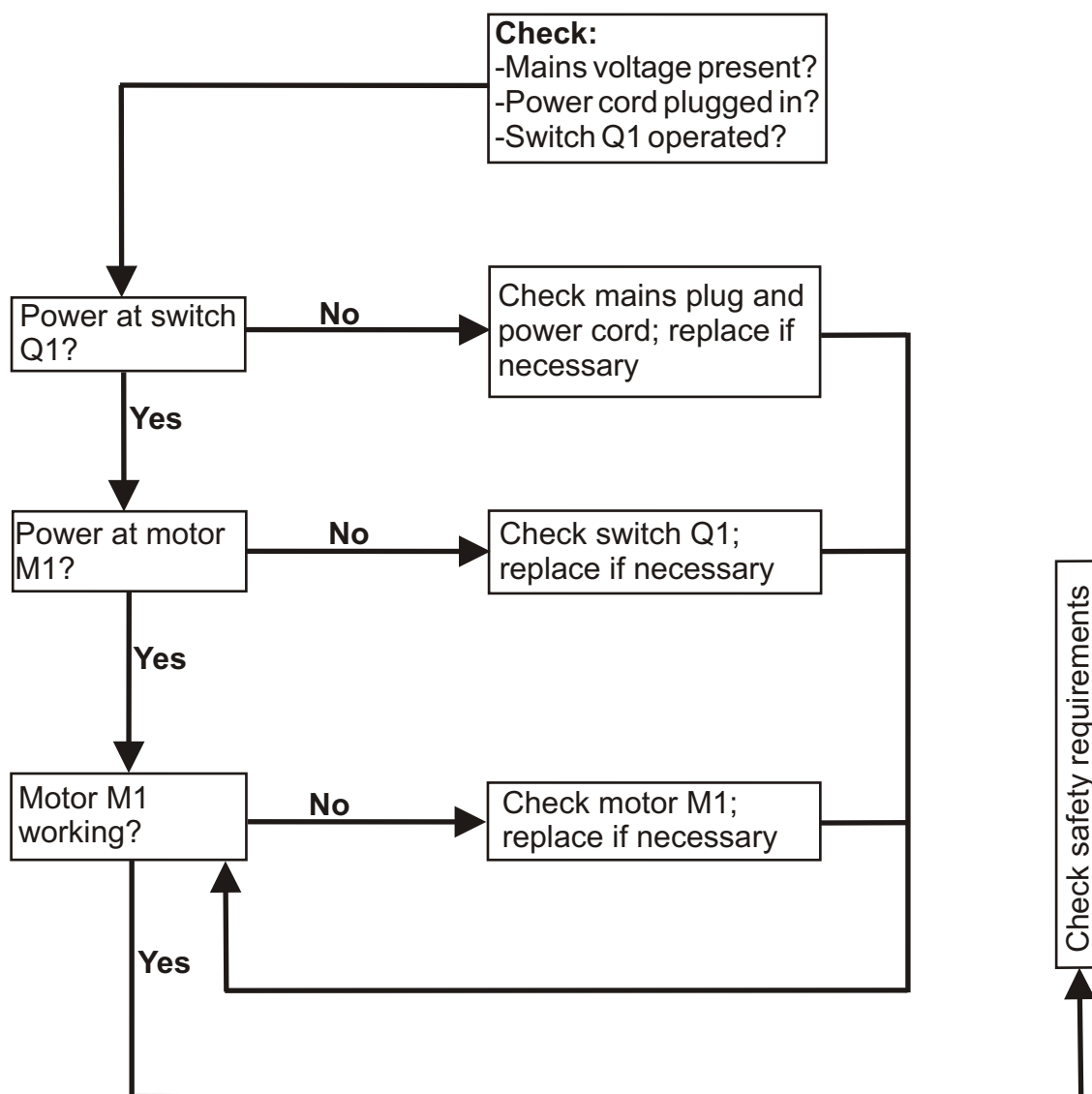
DIN VDE 0701/0702:  
Repairing, modifying and testing electrical installations.

Version / Type			Buddy 15	Buddy 18				
Country Variants			EU	EU	GB 230V	ZA	AU	JP
Electrical data	Voltage	V	230				240	100
	Frequency	Hz	50/60					
	Fusing	A	16		13	16	15	
	Power consumption PIEC	W	1000					
	Connected load for appliance socket	W	-					
	Total connected load	W	-					
	Power cord lenght	m	5,5					
	Power cord type		H05VV-F 2x0,75					
Protection	Protection class		II					
	Protection category		IPX4					
Dimensions and wight	Width	mm	320					
	Depth	mm	385					
	Hight	mm	420	455				
	Weight	kg	3,9	4,2				
	Tank volume	l	15	18				
Unit-specific data	Air volume flow	l/min	3600					
	Static wate lift (max.)	Pa	16000					
	Sound pressure level at 1m, EN 60704-1	dB(A)	72					
	Operating noise	dB(A)	69					

Version / Type			Aero 20-01				Aero 20-01 *INOX*		Aero 25-01		Aero 20-11			
Country Variants			EU	GB 230V	GB 110V	JP	EU	ZA	ZA	GB 230V	EU	DK	CH	AU
Electrical data	Voltage	V	230		110	100	230						240	
	Frequency	Hz	50/60											
	Fusing	A	16	13	16	15	16			13	16	10	15	
	Power consumption PIEC	W	1000						1150		1000			
	Connected load for appliance socket	W	-								2000	1200	1300	
	Total connected load	W	-								3000	2200	2300	
	Power cord lenght	m	5,5											
	Power cord type		H05VV-F2x0,75		H07BQ-F2x1,0	AWG 14-3 SJTW	H05VV-F2x0,75				H05VV-F3G1,5	H05VV-FG1,0	H05VV-F3G1,5	
Protection	Protection class		II								I			
	Protection category		IPX4											
Dimensions and wight	Width	mm	375											
	Depth	mm	380											
	Hight	mm	485						545		485			
	Weight	kg	5,7				6,7			5,9		5,7		
	Tank volume	l	20						25		20			
Unit-specific data	Air volume flow	l/min	3600											
	Static wate lift (max.)	Pa	18000						19000		18000			
	Sound pressure level at 1m, EN 60704-1	dB(A)	70											
	Operating noise	dB(A)	67											

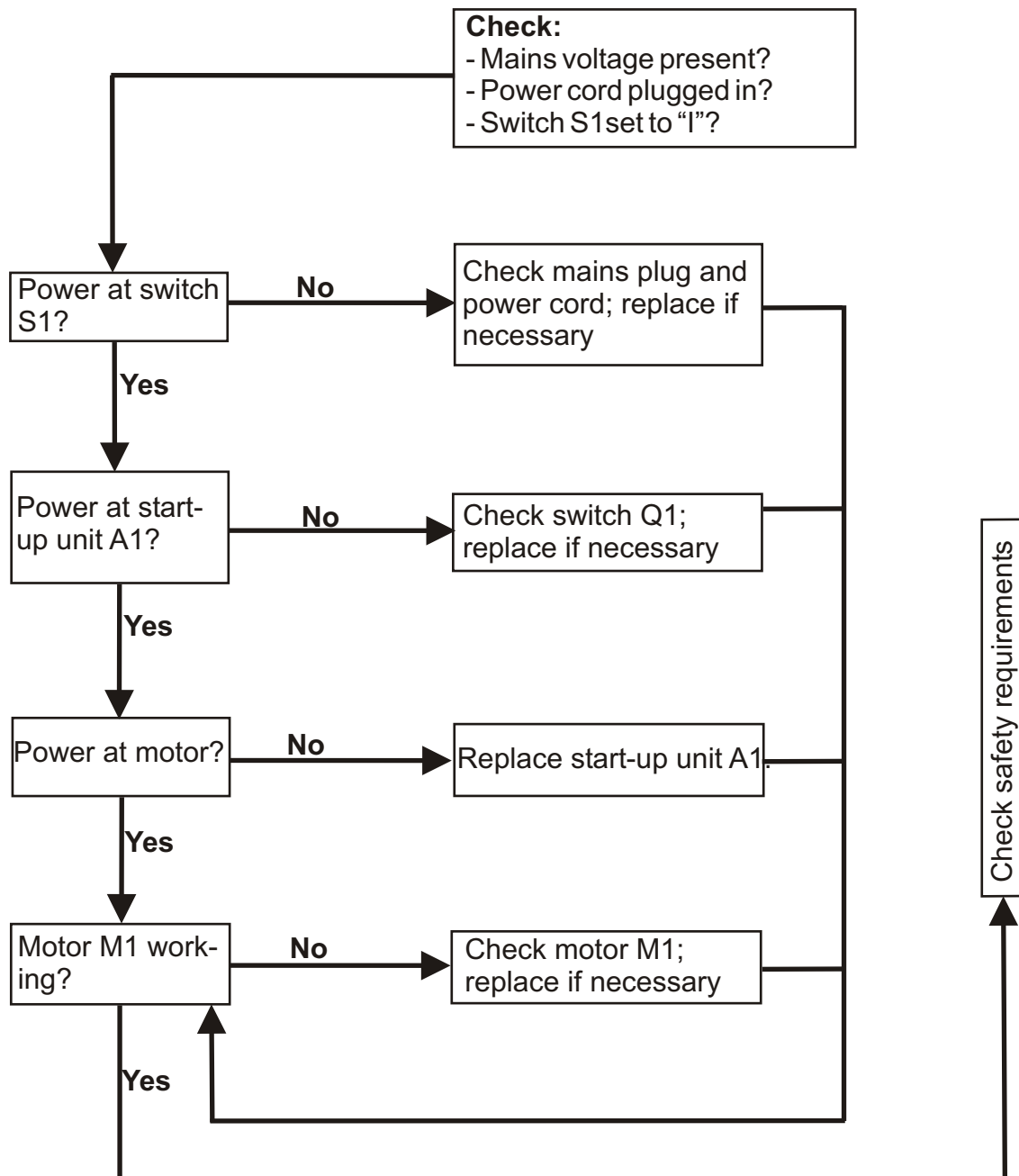
Version / Type			Aero 25-11		Aero 20-21		Aero 20-21 *INOX*		Aero 25-21							
Country Variants			EU	FR	EU	DK	FR	US	EU	DK	GB 230V	FR	CH	AU	JP	US
Electrical data	Voltage	V	230					120	230					240	100	120
	Frequency	Hz	50/60													
	Fusing	A	16			10	16	15	16	10	13	16	10	15		
	Power consumption PIEC	W	1150	1000				1150						1000		
	Connected load for appliance socket	W	2000			1300	2000	800	2000	1150	1800	2000	1150	2000	500	800
	Total connected load	W	3000			2200	3000	1800	3150	2300	2950	3150	2300	3150	1500	1800
	Power cord lenght	m	5,5													
	Power cord type		H05VV-F3G1,5	H05VV-F3G1,0		H05VV-F3G1,5	AWG 14-3 SJTW	H05VV-F3G1,5	H05VV-F3G1,0	H05VV-F3G1,5	H05VV-F3G1,0	H05VV-F3G1,5	H05VV-F3G1,0	AWG 14-3 SJTW	AWG 14-3 SJTW	
Protection	Protection class		I													
	Protection category		IPX4													
Dimensions and weight	Width	mm	375													
	Depth	mm	380													
	Hight	mm	545	485				545								
	Weight	kg	5,7				6,7		5,9							
	Tank volume	l	20						25							
Unit-specific data	Air volume flow	l/min	3600													
	Static wate lift (max.)	Pa	18000						19000							
	Sound pressure level at 1m, EN 60704-1	dB(A)	70													
	Operating noise	dB(A)	67													

1 Buddy 15/18, Aero 20/25-01/11- Motor not working

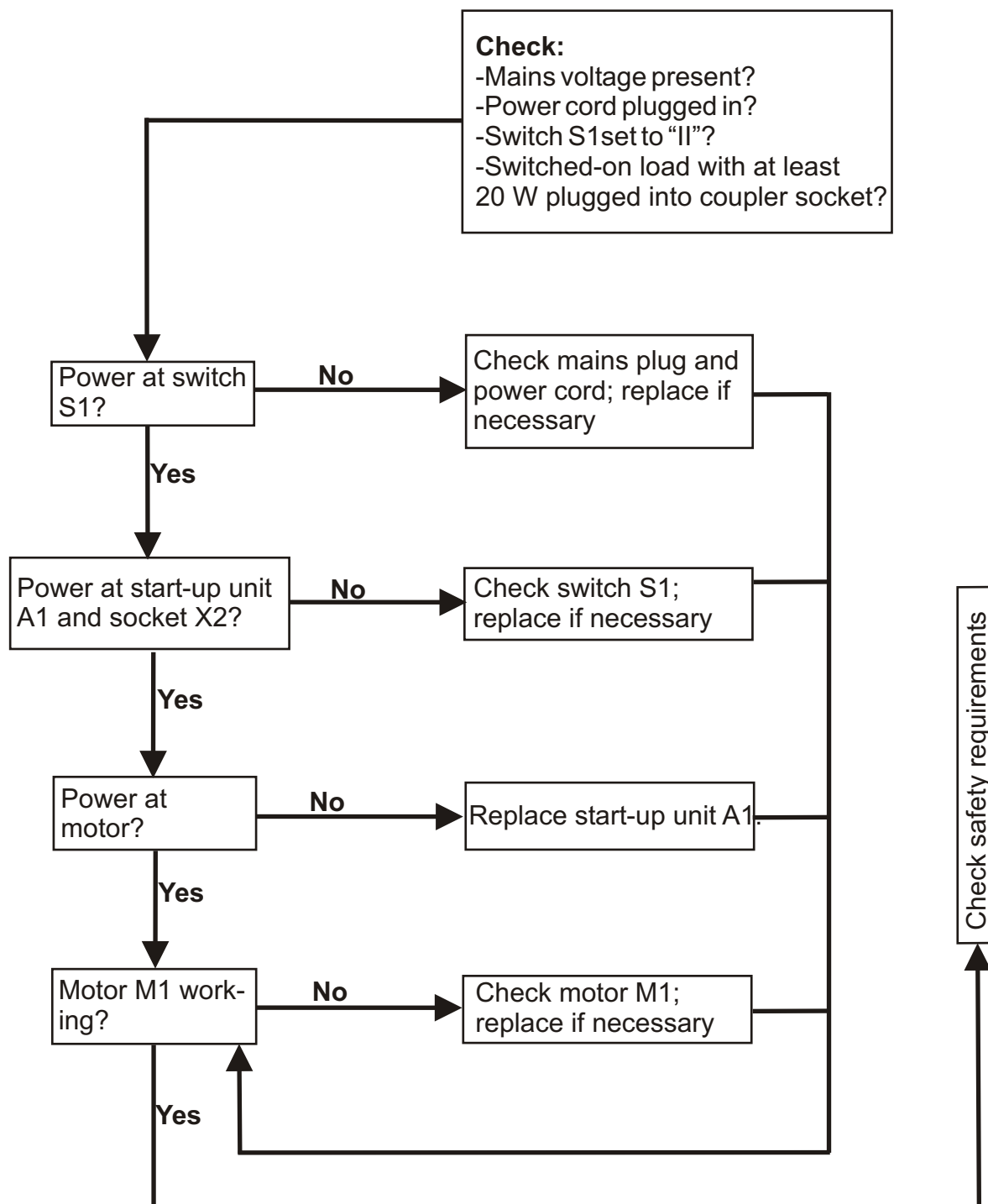




## 2 Aero 20/25-21- Motor not working with switch set to "I"



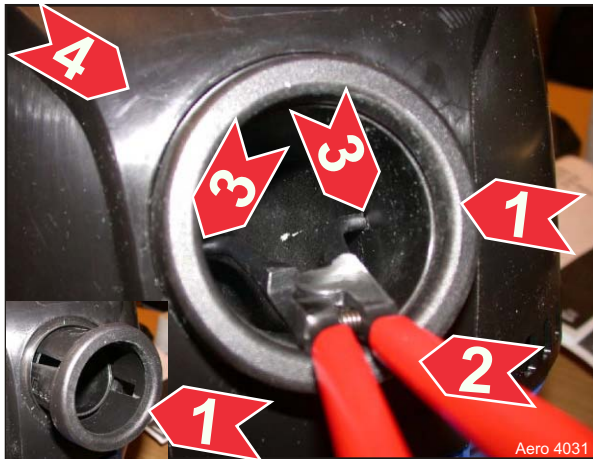
## 3 Aero 20/25-21- Motor not working with switch set to "II"



## 1 Suction head (Buddy)

### Cover / intake fitting

#### 1.1 Disassembling/assembling the intake fitting



Intake fitting (1) in cover (4).

1.) Press the two snap-in lugs (3) of the intake fitting (1) outwards with special pliers (2) (see E/1, page 19) while pulling the intake fitting (1) frontally out of the suction head.

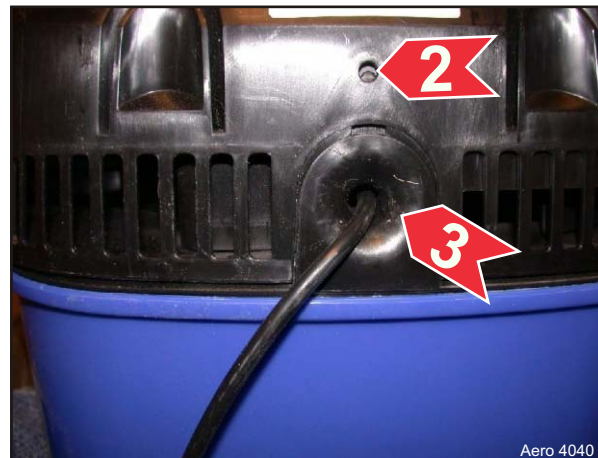
#### 2.) Assembly:

Hold the intake fitting (1) correctly positioned and push it into the container head (4) until the fitting (1) audibly clicks into place.

#### 1.2 Disassembling/assembling the cover



Retaining screws (1) of Buddy cover.



Locking button (2) and cable entry (3) at rear part of cover (4).



Lifting off cover (4).

1.) Remove the intake fitting (see D/1.1, page 11)

2.) Undo the two screws (1) with a Phillips screwdriver.

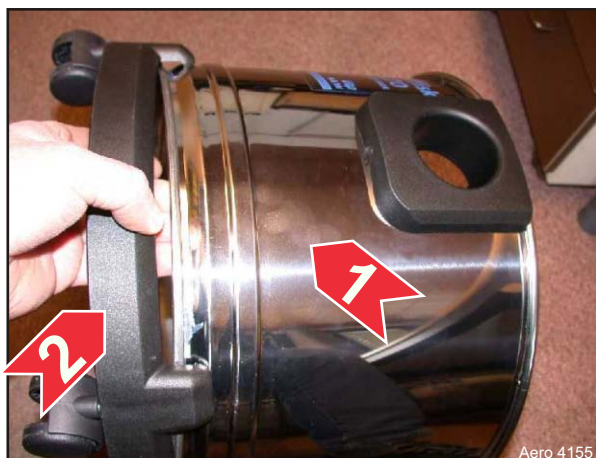
3.) Press the locking button (2) located above the cable entry (3) inwards with a small screwdriver and lift off the cover (4).

4.) Assemble in the reverse order.

## 2 Container (Aero)

### Container / intake fitting

### 2.1 Disassembling/assembling the container ring (Aero 20 INOX only)



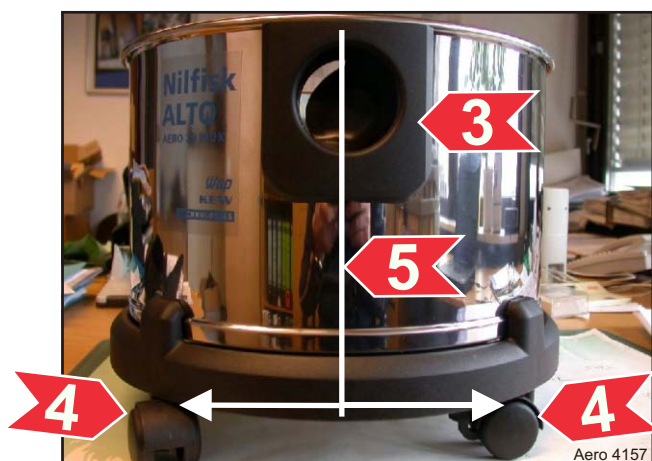
Pulling off container ring (2) by hand from container (1).

1.) Remove the suction head from the container (1)

2.) Put down the container (1) on its side. Firmly pull off the container ring (2) by hand downwards from the container (1) and remove it.

#### 3.) Assembly:

Place the container (1) with its opening facing downwards and press the container ring (2) onto the container (1) as far as it will go, making sure the intake fitting (3) is "centred" (5) between two castors (4).



Aligning castors (4) "centred" (5) to intake fitting (3).

### 2.2 Disassembling/assembling the intake fitting (Aero 20 INOX only)



Pulling off retaining ring (1) by hand from intake fitting (2).

1.) Remove the suction head from the container.

2.) Undo the retaining ring (1) by turning it while pulling it off to the rear.

3.) Remove the intake fitting (2) from the container.

4.) Assemble in the reverse order, making sure the retaining ring (1) is positioned correctly.

## Container / intake fitting

### 2.3 Disassembling/assembling the intake fitting in the plastic container



Intake fitting (1) in place in container (2).

#### Disassembly:

The intake fitting is snapped onto the container and can only be removed by breaking it.

#### Assembly:

Hold the intake fitting correctly positioned in the container opening and push it in until it audibly clicks into place.



Intake fitting (1) before assembly in container (2).



### 3 Suction head / electrical components (Aero)

**Cover / Clamps**

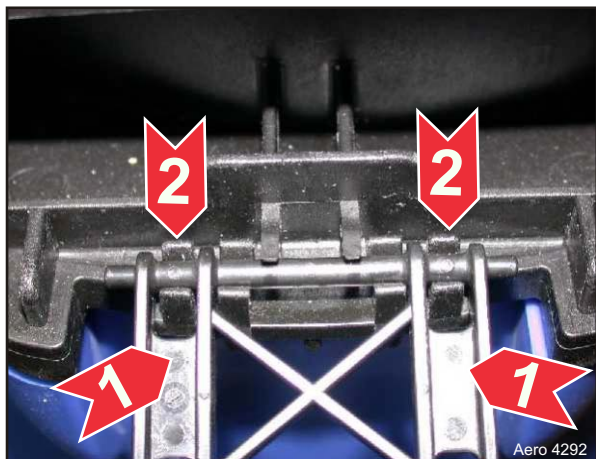
#### 3.1 Disassembling/assembling the cover



Cover (2) with handle (3).

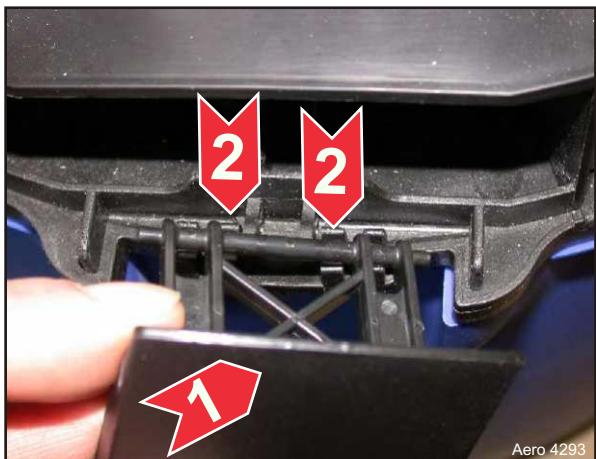
- 1.) Undo the two screws (1) at the handle with a Phillips screwdriver.
- 2.) Lift off the cover and put it down to the side.
- 3.) Assemble in the reverse order, making sure cables are not squashed or caught up.

#### 3.2 Disassembling/assembling the locking clamp

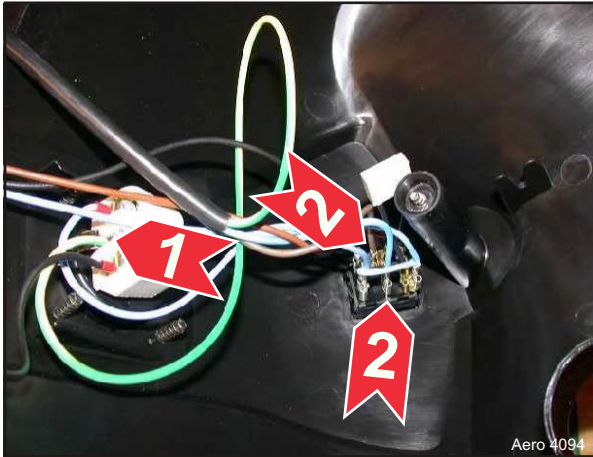


Locking clamp (1) mounted correctly on the base.

- 1.) Remove the cover ( see D/3.1 page 14).
- 2.) Pull out the clamp (1) laterally upward of the snap-on connection (2).
- 3.) Assemble in the reverse order.

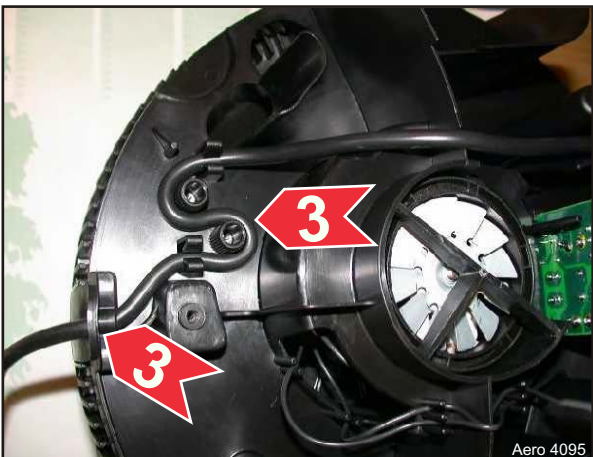


Pull out the clamp of the snap-on connection (2)

**Power cord****3.3 Disassembling/assembling the power cord**

Earth lead connection (1) at socket and power connection (2) at switch.

- 1.) Remove the cover (see D/3.1, page 14).
- 2.) Disconnect the earth lead (1) from the socket (Aero 20/25-11/21 only).
- 3.) Disconnect the two leads (2) from the switch.
- 4.) Lift the insulating material out of the cover (see D/3.7 page 17).

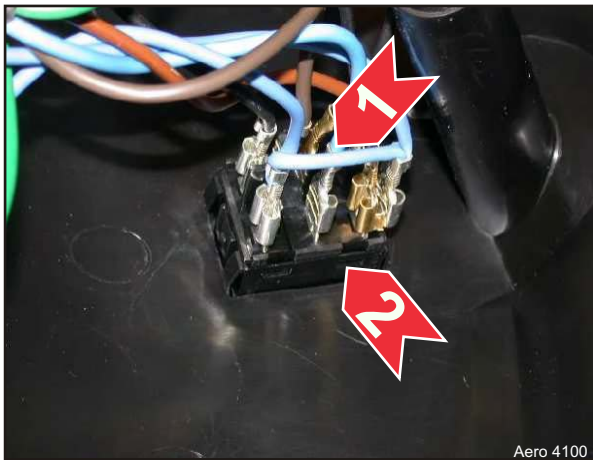


Power cord routed through opening (3) and strain relief (3) on clamping plate.

- 5.) Remove the cable from the strain relief (3) and pull it out through the opening in the clamping plate (3).
- 6.) Assemble in the reverse order.

## Switch / socket

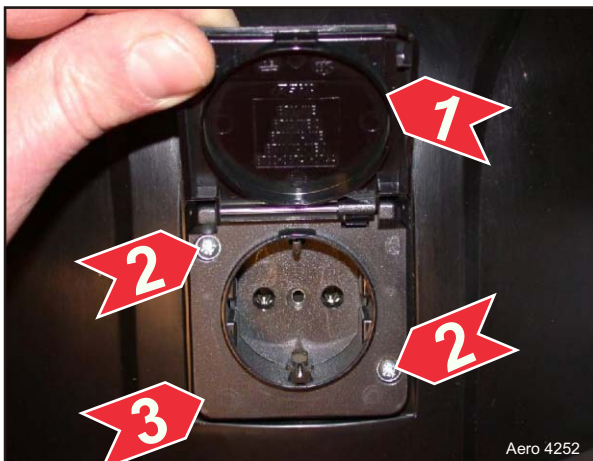
### 3.4 Disassembling/assembling the switch



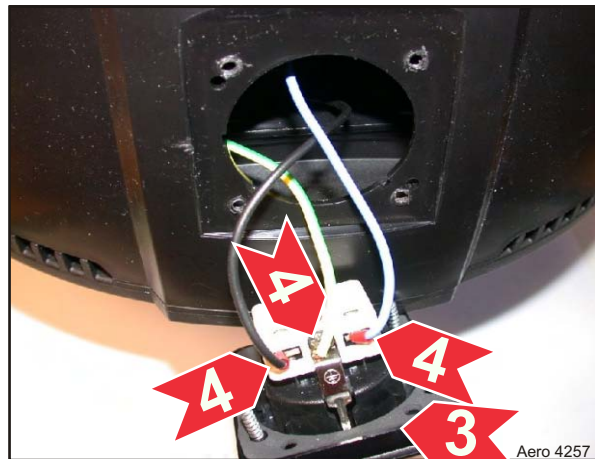
Cable lugs (1) connected to switch (2).

- 1.) Remove the cover (see D/3.1, page 14).
- 2.) Mark the position of the cable lugs (1) and disconnect all lugs from the switch (2).
- 3.) Press the switch (2) downwards and out of the shell opening.
- 4.) Assemble in the reverse order.

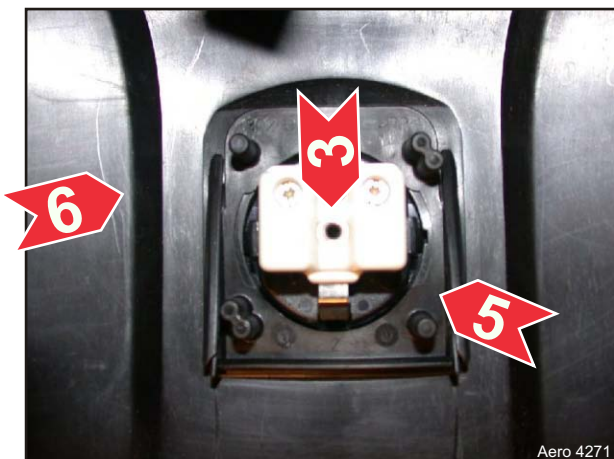
### 3.5 Disassembling/assembling the socket (Aero 20/25-11/21 only)



Two retaining screws (2) of socket under hinged cover (1).



Cable connections (4) at socket (3).



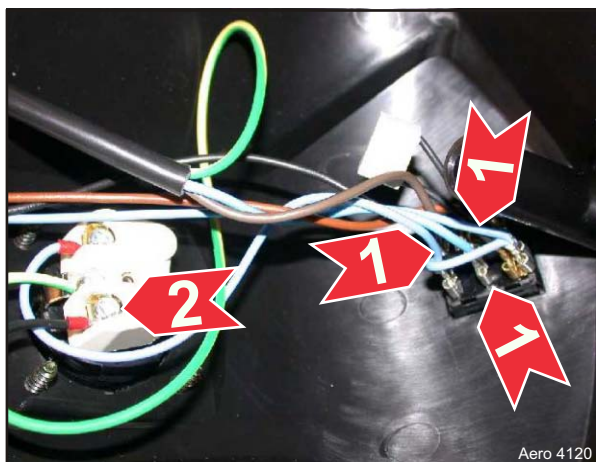
Dome plate (5) mounted correctly inside cover (6).

- 1.) Open the hinged cover (1), undo the two screws (2) with a Phillips screwdriver and remove the socket (3) frontally from the cover.
- 2.) Mark the position of the leads (4), disconnect them from the socket (3) and take off the socket (3)
- 3.) Assemble in the reverse order, making sure the socket dome plate (5) is correctly positioned inside the cover (6).

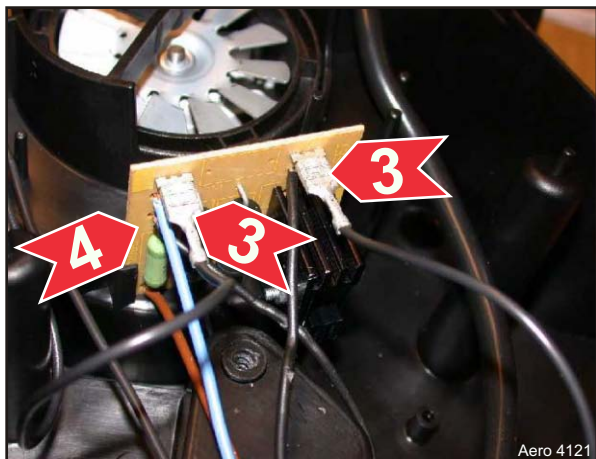
#### Note:

The cover (6) must be removed to check the dome plate (5) (see D/3.1, page 14).



**Start-up unit / clamping plate****3.6 Disassembling/assembling the start-up unit**

Cable connections (1+2) for start-up unit (4) at switch and socket.



Start-up unit (4) with motor cable connections (3), mounted on clamping plate.

- 1.) Remove the cover (see D/3.1, page 14).
- 2.) Disconnect the brown (1), blue (1) and black (1) leads from the switch.
- 3.) Disconnect the black lead (2) from the socket and pull it off.
- 4.) Lift the insulating material out of the cover (see D3.7, page 17).
- 5.) Disconnect the two motor leads (3) from the start-up unit (4).
- 6.) Pull the unit (4) upwards out of its holder and remove it.
- 7.) Assemble in the reverse order.

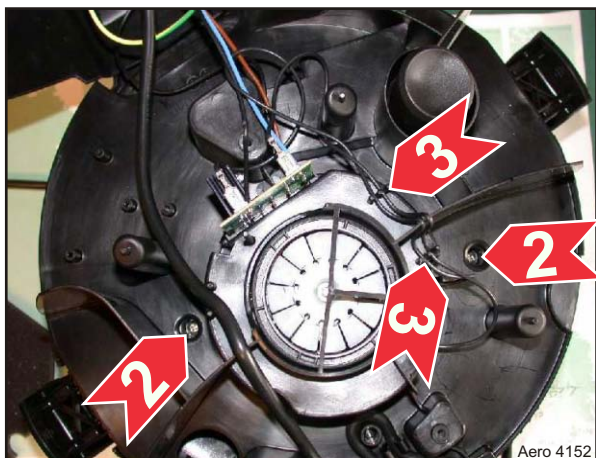
**3.7 Disassembling/assembling the clamping plate**

Insulating material (1) in place on clamping plate.

- 1.) Remove the cover (see D/3.1, page 14).
- 2.) Lift out the insulating material (1).
- 3.) Disconnect the two motor leads from the start-up unit (see D/3.6, page 17) and remove the leads from the clamp.

Continued on next page

## Clamping plate / motor



Retaining screws (2) of clamping plate and clamp (3) for motor leads.

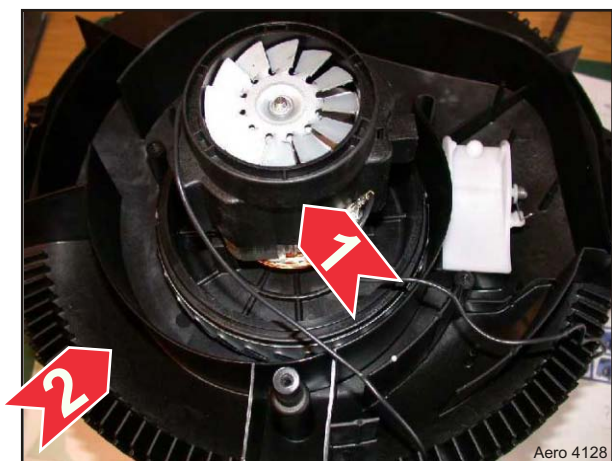
4.) Disconnect the power leads from the switch and the socket (see D/3.3, page 15).

5.) Pull the start-up unit (4) upwards out of its holder (see D/3.6, page 17) and remove it together with the cover.

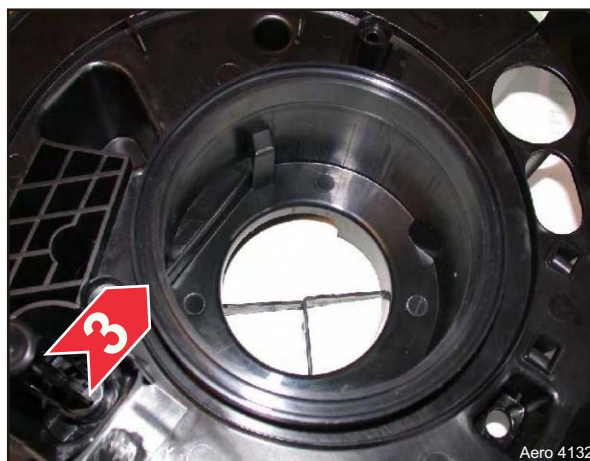
6.) Undo the two screws (2) from the clamping plate with a Phillips screwdriver and lift off the clamping plate.

7.) Assemble in the reverse order, making sure the motor leads are located correctly in the clamps (3).

### 3.8 Disassembling/assembling the motor



Motor (1) in support plate (2).



Upper motor bearing ring (3), mounted on clamping plate.



Lower motor bearing ring (O-ring) (4), mounted on support plate.

1.) Disassemble the clamping plate (see D/3.7, page 17).

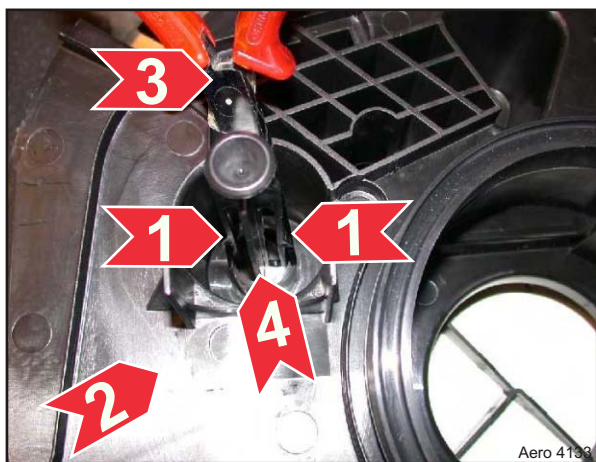
2.) Mark the position of the motor (1) in the support plate (4) and lift out the motor (1).

3.) Assemble in the reverse order, making sure the motor bearing rings (3+4) are positioned correctly.

## 4 Filter cleaning (Aero)

Tappet / flap

### 4.1 Disassembling/assembling the filter cleaning (tappet)



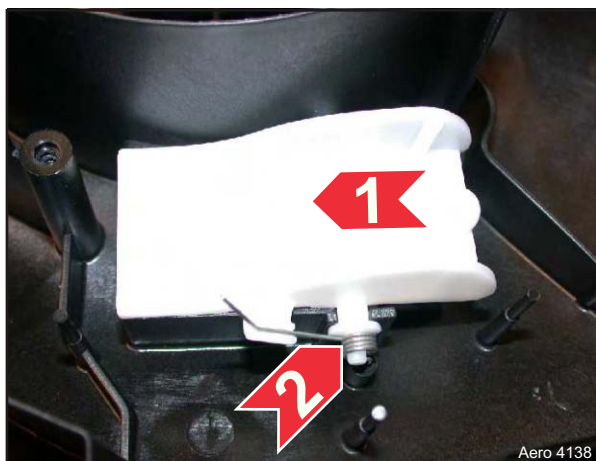
Filter cleaning (tappet (4)) in clamping plate (2).

1.) Disassemble the clamping plate (see D/3.7, page 17).

2.) Use pointed-end pliers (3) to press the snap-in lugs (1) at the tappet (4) together while pulling out the tappet (4) downwards.

3.) When assembling, push in the tappet (4) in the correct position until the snap-in lugs (1) audibly click into place.

### 4.2 Disassembling/assembling the filter cleaning flap



Filter cleaning flap (1) with tension spring (2).

1.) Disassemble the clamping plate (see D/3.7, page 17).

2.) Pull off the deduster flap (1) with the tension spring (2) upwards and remove the flap (1).

3.) Assemble in the reverse order.



**Special tools****1 Special tools**

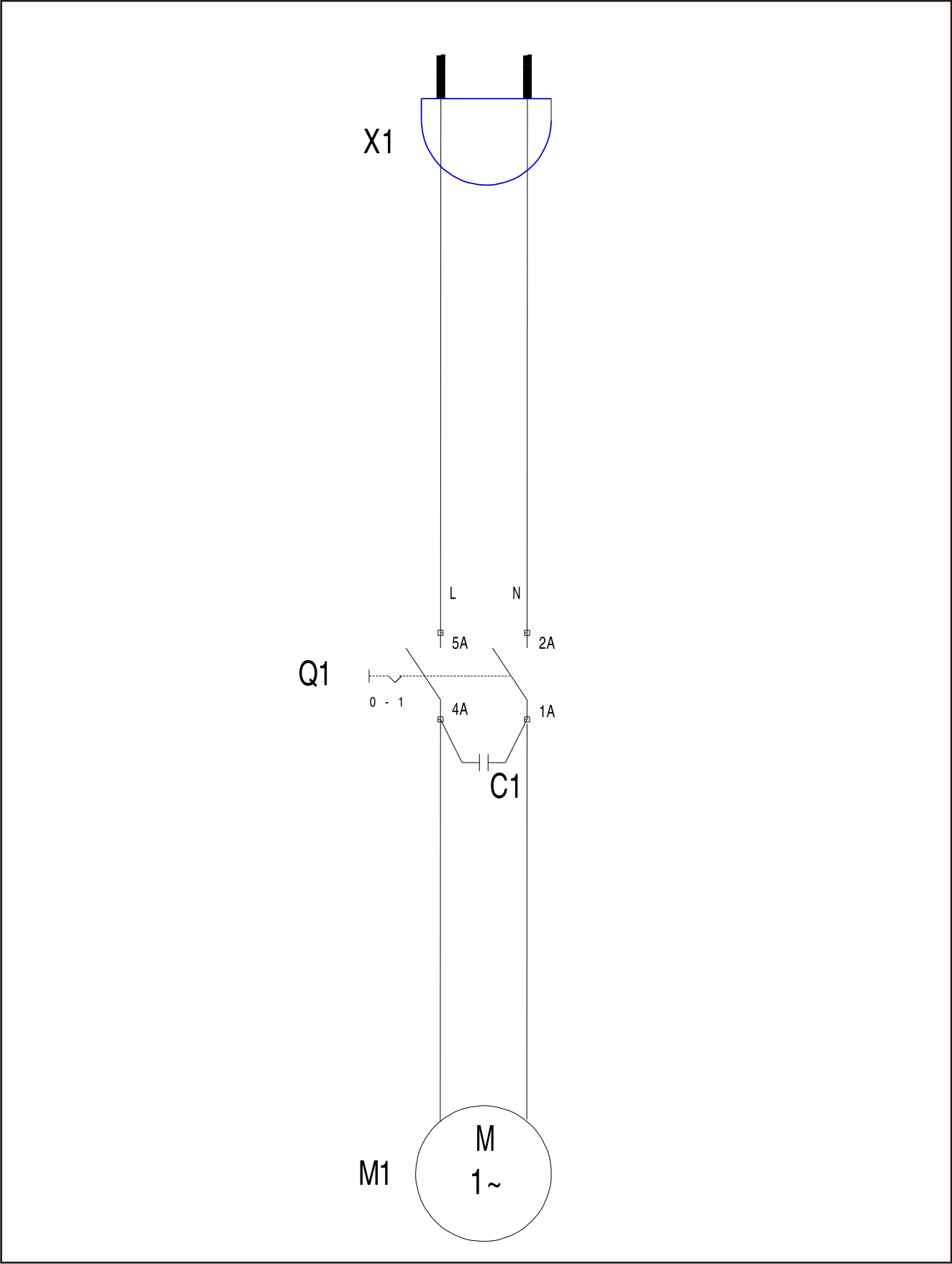
1.) Special pliers (p/n: 302002482)

Special pliers (p/n: 302002482) for removal of intake fitting used for Buddy series.

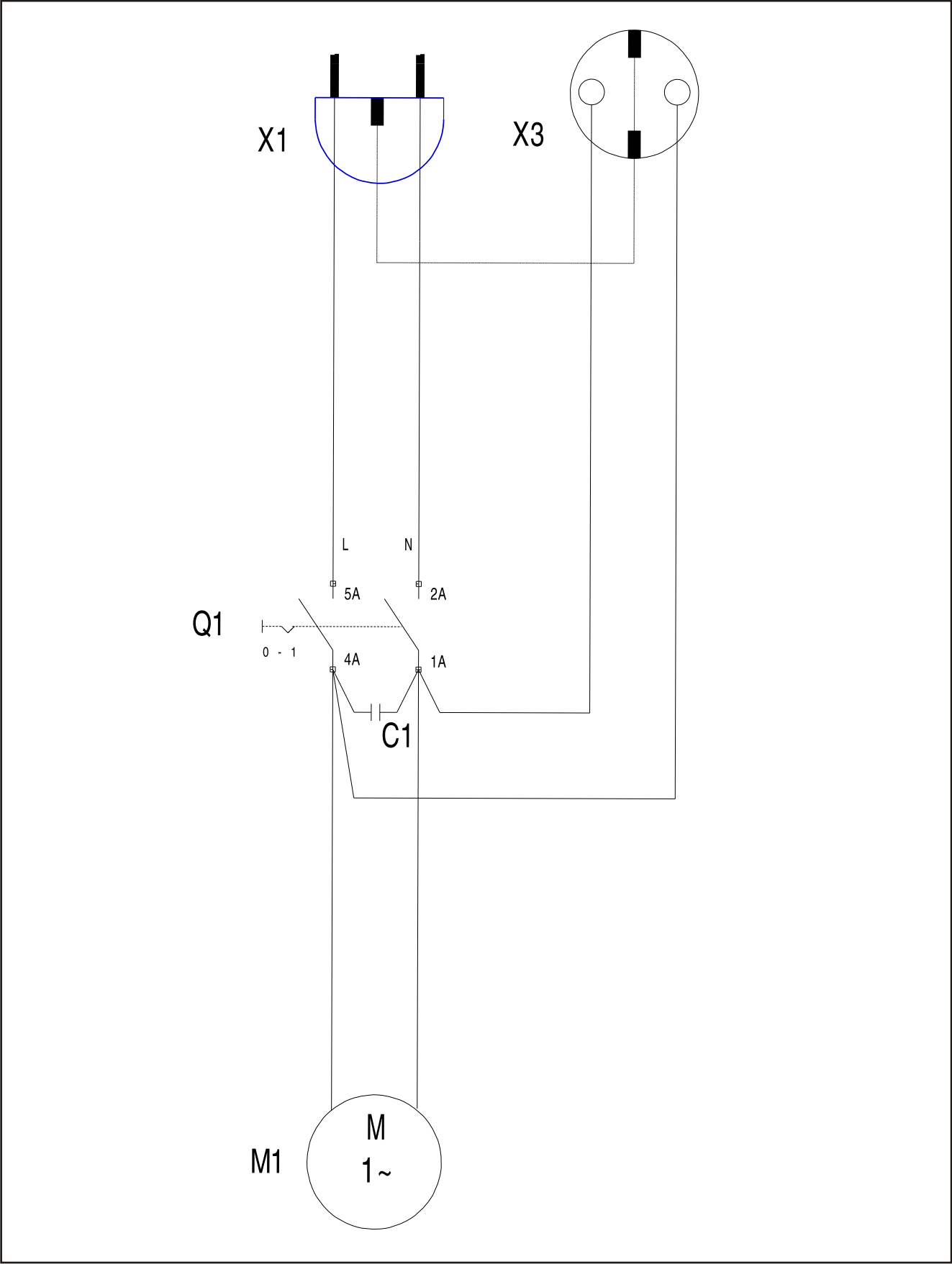
**1 Wiring diagram**

Buddy 15/18; Aero 20/25-01/INOX

**1.1 Wiring diagram Buddy 15/18; Aero 20/25-01/INOX**



1.2 Wiring diagram Aero 20/25-11



### 1.3 Wiring diagram Aero 20/25-21

